AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-9 (Canceled).

10. (Canceled)

11. (Currently Amended) A method for localizing one or more sources, each source (emitters) being in motion relative to a network of sensors, the method comprising the steps of:

separating the sources in order to identify the direction vectors associated with the response of the sensors to a source at a given incidence, said incidence angles varying depending on the position of the sensors network relative to said sources;

associating direction vectors $a_{1m}...a_{Km}$ obtained for the m^{th} transmitter and respectively at the instants $t_1...t_K$, are associated during a period Dt in order to separate different sources for each instant $t_1...t_K$, said incidence angles varying depending on the position of the sensors network relative to said sources;

wherein the direction vectors $a_{1m}...a_{Km}$ obtained for the mobile sources and respectively for the instants $t_1...t_K$ are associated during the period Dt in order to separate the different sources for each instant $t_1...t_K$ the position (x_m, y_m, z_m) of the mobile emitter is directly localized from the direction vectors $a_{1m}...a_{Km}$ associated to a same emitter, one emitter being obtained from the different instants t_k;

~~The method according to claim 10,~~ wherein the associating step comprises:

Step ASE – 1 : Initialization of the process at k=2.

Step ASE – 2 : For $1<m<M$ determining the indices $i(m)$ in using the relationship $d(a_{km}, b_{i(m)}) = \min_{1\le i\le M} [d(a_{km}, b_i)]$, the <u>direction</u> vector $a_{k,m}$ and the vectors b_i identified at the instant t_{k+1} for $(1<i<M)$, setting up a function $\beta_m(t_k) = d(a_{km}, a_{om})$, wherein $d(\boldsymbol{u}, \boldsymbol{v}) = 1-\frac{|\boldsymbol{u}^{\mathrm{H}}\boldsymbol{v}|^2}{(\boldsymbol{u}^{\mathrm{H}}\boldsymbol{u})(\boldsymbol{v}^{\mathrm{H}}\boldsymbol{v})}$

Step ASE – 3 : For $1<m<M$ performing the operation $a_{k+1\ m}= b_{i(m)}$,

Step ASE – 4 : Incrementing $k\leftarrow k+1$ and if $k<K$ returning to the step ASE-1,

Step ASE – 5 : Starting from the family of instants $\Phi=\{ t_1<\ldots< t_K\}$ thus obtained, extracting the instants t_i which do not belong to a zone defined by the curve $\beta_m(t_k)$ and a zone of tolerance;

where M is the number of transmitters.

12. (**Currently Amended)** The method according to claim [[10]] <u>11</u>, wherein the localizing step comprises:

a normalized vector correlation $L_K(x,y,z)$ maximizing in the space (x,y,z) of the position of a transmitter with

$$L_K(x,y,z)=\frac{\left|\mathbf{b}_K{}^{\mathrm{H}}\mathbf{v}_K(x,y,z)\right|^2}{\left(\mathbf{b}_K{}^{\mathrm{H}}\mathbf{b}_K\right)\left(\mathbf{v}_K(x,y,z)^{\mathrm{H}}\mathbf{v}_K(x,y,z)\right)}$$

with

$$\mathbf{b}_K=\begin{bmatrix}\mathbf{b}_{1m}\\ \vdots \\ \mathbf{b}_{Km}\end{bmatrix}=\mathbf{v}_K(x_m,y_m,z_m)+\mathbf{w}_K\ ,\quad \mathbf{v}_K(x,y,z)=\begin{bmatrix}\mathbf{b}(t_1,x,y,z)\\ \vdots \\ \mathbf{b}(t_K,x,y,z)\end{bmatrix}$$

and $\mathbf{w}_K=\begin{bmatrix}\mathbf{w}_{1m}\\ \vdots \\ \mathbf{w}_{Km}\end{bmatrix}$

where W_K is the noise vector for all the positions (x, y, z) of a transmitter; and

wherein the vector b_K comprises a vector representing the noise, the components of which are functions of the components of the direction vectors $a_{1m} \ldots a_{Km}$.

13. (Canceled)

14. (Previously Presented) The method according to claim 12, wherein comprising:

a step in which the matrix of covariance $R=E[w_K w_K^H]$ of the noise vector is determined and in that the following criterion is maximized :

$$L_K'(x,y,z)=\frac{\left|\mathbf{b}_K{}^{\mathrm{H}}\,\mathbf{R}^{-1}\,\mathbf{v}_K(x,y,z)\right|^2}{\left(\mathbf{b}_K{}^{\mathrm{H}}\mathbf{R}^{-1}\mathbf{b}_K\right)\left(\mathbf{v}_K(x,y,z)^{\mathrm{H}}\mathbf{R}^{-1}\mathbf{v}_K(x,y,z)\right)}$$

Where v_x is a speed vector and b_k is vector for source separation and source identification.

15. (Previously Presented) Method according to claim 14, wherein the evaluation of the criterion $L_K(x,y,z)$ and/or of the criterion $L_K'(x,y,z)$ is recursive.

16. (Previously Presented) The method according to claim 14, wherein it comprises a step of comparison of the maximum values with a threshold value.

17. (Previously Presented) The method according to claim 11, wherein the value of K is initially fixed at K_0.

18. (Currently Amended) The method according to claim [[10]]11, wherein the transmitters to be localized are mobile and in that the direction vector considered is parameterized by the position of the transmitter to be localized and the speed vector.